Assisted Reproductive technology - Adverse outcomes associated with multipleconceptions and multiple births Assisted Reproductive technology - Adverse outcomes associated with multipleconceptions and multiple births

Mirudhubashini Govindarajan *

Assisted reproductive technology is associated with a 10-30 fold increase in multiple pregnancy rates as compared to the rate of multiple pregnancies in spontaneously conceived pregnancies (>30% vs 1-3% in general population). It is the single most common adverse outcome of assisted reproductive technologies.

Dizygosity (or higher zygosity) results from multiple embryo transfer. However, monozygotic twinning can also occur. Studies have documented monozygotic twinning with in vitro fertilization and embryo manipulation. Assisted hatching and extended culture to blastocyst stage are contributory factors.

The increased risk for multiple pregnancies is higher for all stages of pregnancy and neonatal period. These include miscarriage, gestational diabetes, pre eclampsia, impaired fetal growth, stillbirth problems during labor including intrapartum hypoxia and increased need for elective and emergency caesarian sections. Most significantly twin pregnancy carried a 5-6 fold increase in preterm birth. These in turn leads to a prolonged NICU care, mental and physical handicap including cerebral palsy, mental disability, learning difficulties and chronic lung disease.

Multifetal birth accounts for 17% of all preterm births (>37 weeks), 23% of early preterm births (>32 weeks), 24% of all low birth weight infants (<2500 gms) and 26% of very low birth weight infants (<1500 gms)

Transferring two embryos can limit the occurrence of triplets in younger women who have good prognosis without significantly decreasing the overall pregnancy rate. The American Society for Reproductive Medicine and Society for Reproductive Technology have developed updated recommendations on number of embryos per transfer to reduce the risk of multiple gestations. The multiple gestation risk of ART unlike superovulation can be effectively managed by by limiting the number of embryos transferred. When considering how to minimize multiple gestations, ART can be viewed as safer and more favorable approach compared to superovulation.

At present the vast majority of multiple pregnancies secondary to ART are the result of replacing multiple embryos. Multiple pregnancies are indeed perceived as an ideal outcome by many parents. Adequate counseling regarding the risks may go far towards changing this scenario.

* Prof. Mirudhubashini Govindarajan FRCS (Canada) ,
Director, Womens Center, Coimbatore